

HITSP Document Reliable Interchange Transaction

HITSP/T31



Healthcare Information Technology Standards Panel

Submitted to:

Healthcare Information Technology Standards Panel

Submitted by:

**Security, Privacy and Infrastructure Domain Technical Committee
(Formerly Security and Privacy Technical Committee)**



DOCUMENT CHANGE HISTORY

Version Number	Description of Change	Name of Author	Date Published
0.0.1	Released for Implementation	Population Health Technical Committee	December 7, 2007
0.0.2	Review Copy	Population Health Technical Committee	March 19, 2008
1.0	Released for Implementation	Population Health Technical Committee	March 27, 2008
	Template Updated to V2.4	Project Team	July 31, 2008
1.0.1	Review Copy	Security, Privacy and Infrastructure Domain Technical Committee	August 20, 2008
1.1	Released for Implementation	Security, Privacy and Infrastructure Domain Technical Committee	August 27, 2008
1.1.1	Review Copy	Security, Privacy and Infrastructure Domain Technical Committee	December 10, 2008
1.2	Released for Implementation	Security, Privacy and Infrastructure Domain Technical Committee	December 18, 2008
	Template V2.5	Project Team	June 30, 2009
1.2.1	Review Copy	Security, Privacy and Infrastructure Domain Technical Committee	June 30, 2009
1.3	Released for Implementation	Security, Privacy and Infrastructure Domain Technical Committee	July 8, 2009



TABLE OF CONTENTS

1.0	INTRODUCTION.....	5
1.1	Overview.....	5
1.2	Copyright Permissions.....	5
1.3	Reference Documents.....	5
1.4	Conformance	6
1.4.1	Conformance Criteria	6
1.4.2	Conformance Scoping, Subsetting and Options	6
2.0	TRANSACTION DEFINITION.....	7
2.1	Context Overview	7
2.1.1	Transaction Constraints.....	7
2.1.2	Interfaces.....	8
2.1.3	Interface Interactions	8
2.1.4	Pre-conditions.....	8
2.1.4.1	Process Triggers	9
2.1.5	Post-conditions	9
2.1.5.1	Required Outputs	9
2.1.6	Data Flows.....	9
2.2	List of HITSP Constructs	9
2.2.1	Construct Dependencies	9
2.2.2	Additional Constraints on Required Constructs.....	9
2.3	Standards	10
2.3.1	Regulatory Guidance.....	10
2.3.2	Selected Standards	10
2.3.3	Informative Reference Standards.....	10
3.0	APPENDIX	12
4.0	DOCUMENT UPDATES	13
4.1	December 7, 2007	13
4.2	March 19, 2008.....	13
4.3	March 27, 2008.....	13
4.4	August 20, 2008	13
4.5	August 27, 2008	13
4.6	December 10, 2008	13
4.7	December 18, 2008	14
4.8	June 30, 2009.....	14
4.9	July 8, 2009	14



FIGURES AND TABLES

Figure 2-1 Document Reliable Interchange Interface Interactions	8
Table 1-1 Reference Documents	5
Table 2-1 Transaction Constraints	7
Table 2-2 Interfaces	8
Table 2-3 Pre-conditions	8
Table 2-4 Process Triggers.....	9
Table 2-5 Post-conditions	9
Table 2-6 Required Outputs.....	9
Table 2-7 List of HITSP Constructs	9
Table 2-8 Construct Dependencies	9
Table 2-9 Additional Constraints on Required Constructs	9
Table 2-10 Regulatory Guidance	10
Table 2-11 Selected Standards	10
Table 2-12 Informative Reference Standards	10



1.0 INTRODUCTION

1.1 OVERVIEW

A healthcare delivery organization or clinician may need to communicate a clinical document to a recipient through direct communication. This may involve direct interchange between Electronic Health Records (EHRs), Personal Health Records (PHRs), Quality Measurement Organizations, Public Health Authorities and other healthcare IT systems in the absence of a document sharing infrastructure such as that enabled by the Integrating the Healthcare Enterprise (IHE) IT Infrastructure Technical Framework. The content of the communication might be clinical documents, quality documents or public health documents. This construct provides a standards based mechanism for conveying a set of medical documents in a point-to-point network based communication.

This Transaction uses the IHE Cross-Enterprise Document Reliable Interchange (XDR) Integration Profile, a companion to the IHE Cross-Enterprise Document Sharing (XDS) Integration Profile. Cross-Enterprise Document Reliable Interchange (XDR) uses the XDS defined metadata formats in a simpler environment in which the communicating parties have agreed to a point-to-point interchange rather than communicating via document sharing.

This specification includes, by reference, the Transactions and Components that comprise the Provide and Register Transaction. It describes the processes supported by these structures and the work that is accomplished by implementing this Transaction. Source material is from the IHE IT Infrastructure Technical Framework (ITI-TF) 2007-2008 Trial Implementation Supplement Cross-enterprise Document Reliable Interchange (XDR), Release 3.0.

1.2 COPYRIGHT PERMISSIONS

COPYRIGHT NOTICE

© 2009 ANSI. This material may be copied without permission from ANSI only if and to the extent that the text is not altered in any fashion and ANSI's copyright is clearly noted.

IHE materials used in this document have been extracted from relevant copyrighted materials with permission of Integrating the Healthcare Enterprise (IHE) International. Copies of this standard may be retrieved from the IHE Web Site at www.ihe.net.

1.3 REFERENCE DOCUMENTS

This section provides a list of key reference documents and background material.

A list of key reference documents and background material is provided in the table below. These documents can be retrieved from www.hitsp.org.

Table 1-1 Reference Documents

Reference Document	Document Description
HITSP Acronyms List	Lists and defines the acronyms used in this document
HITSP Glossary	Provides definitions for relevant terms used by HITSP documents
TN900 - Security and Privacy Technical Note	TN900 is a reference document that provides the overall context for use of the HITSP Security and Privacy constructs



1.4 CONFORMANCE

This section describes the conformance criteria, which are objective statements of requirements that can be used to determine if a specific behavior, function, interface or code set has been implemented correctly.

1.4.1 CONFORMANCE CRITERIA

In order to claim conformance to this construct specification, an implementation must satisfy all the requirements and mandatory statements listed in this specification, the associated HITSP Interoperability Specification, its associated construct specifications, as well as conformance criteria from the selected base and composite standards. A conformant system must also implement all of the required interfaces within the scope, subset or implementation option that is selected from the associated Interoperability Specification.

Claims of conformance may only be made for the overall HITSP Interoperability Specification or Capability with which this construct is associated.

1.4.2 CONFORMANCE SCOPING, SUBSETTING AND OPTIONS

A HITSP Interoperability Specification must be implemented in its entirety for an implementation to claim conformance to the specification. HITSP may define the permissibility for interface scoping, subsetting or implementation options by which the specification may be implemented in a limited manner. Such scoping, subsetting and options may extend to associated constructs, such as this construct. This construct must implement all requirements within the selected scope, subset or options as defined in the associated Interoperability Specification to claim conformance.



2.0 TRANSACTION DEFINITION

2.1 CONTEXT OVERVIEW

This Transaction describes a standards based mechanism to enable the interchange of documents using a reliable messaging system. This allows for a point-to-point communication option for the interchange of documents in the absence of an XDS document sharing infrastructure or for communications of documents to one or more specific receivers.

Building on existing standards to define this Transaction, HITSP has chosen the IHE Cross-Enterprise Document Reliable Interchange (XDR) Integration Profile published by Integrating the Healthcare Enterprise (IHE). Source material is from the XDR Supplement to the IHE IT Infrastructure (ITI) Technical Framework (TF), Volume 1 and Volume 2 (ITI TF-1 and ITI TF-2).

The IHE XDR Integration Profile, which is reproduced in part in this specification with written permission from IHE, explains how interfaces should comply with the proposed standards for interoperability. Key concepts from the IHE XDR Integration Profile are introduced in this document to help the reader understand the context of the Profile. The entire IHE XDR Integration Profile is also available at www.ihe.net/Technical_Framework.

Overview of XDR

This section provides an overview of the IHE XDR Integration Profile. Its intent is to provide the reader with an introductory context to the XDR Profile. XDR defines the reliable interchange of IHE Cross-Enterprise Document Sharing (XDS) Integration Profile documents submission sets as a direct communication using Web Services. This permits direct document interchange between EHRs and other healthcare IT systems such as Quality Measurement Organizations and Public Health Authorities in the absence of a document sharing infrastructure such as XDS.

The text for the IHE XDR Integration Profile begins here:

XDR describes the exchange of a set of a patient's documents between healthcare providers, such as: physicians, hospitals, special care networks or other healthcare professionals.

Where XDS Registry/Repositories are not yet implemented or available for the exchange of information, XDR is the viable approach.

In a situation where the information is going to an automated application or robust system capable of automated storage or processing of documents relative to one patient, XDR is the appropriate profile.

The XDR Integration Profile is intended only for exchange of patient related medical documents and not intended to address all cross-enterprise EHR communication needs.

This profile is only defining the digital transport mechanism used for such Use Cases. Content transported will be detailed by Content Profiles such as the ones defined by the IHE PCC (Patient Care Coordination) domain.

The text for the IHE XDR Integration Profile ends here.

2.1.1 TRANSACTION CONSTRAINTS

Table 2-1 Transaction Constraints

Constraint	Constraint Section
No applicable constraints	



2.1.2 INTERFACES

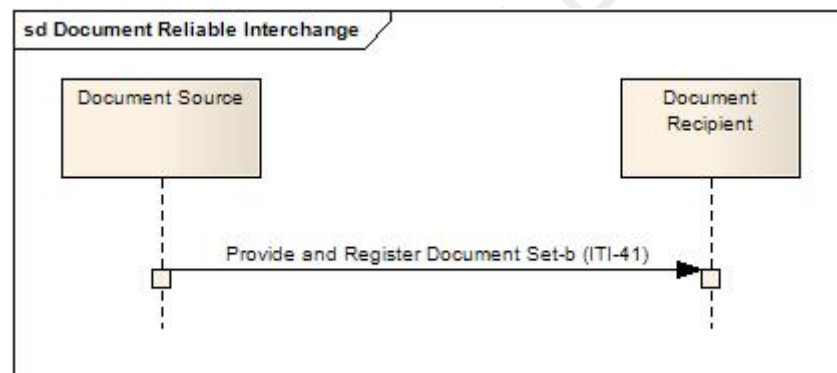
There are two interfaces involved in this Transaction supporting a Web Services based HTTP message sending either a single document or multiple documents. Communication is initiated by the Document Sender and are received and processed by the Document Recipient.

Table 2-2 Interfaces

Interface	Description	Used in Component/Standard	Transaction/Content	Optionality ¹
Document Recipient	Receives a set of documents sent by another interface. Typically this document set will be made available to the intended recipient who will choose to either view it or integrate it into a Health Record	IHE Document Reliable Interchange (XDR)	Provide & Register Document Set.b	R
Document Source	Producer and publisher of documents. It is responsible for sending documents to a Document Repository Interface. It also supplies metadata to the Document Repository Interface for subsequent registration of the documents with the Document Registry Interface	IHE Document Reliable Interchange (XDR)	Provide & Register Document Set.b	R

2.1.3 INTERFACE INTERACTIONS

Figure 2-1 Document Reliable Interchange Interface Interactions



The Document Source sends the document or set of documents to a single recipient, using an HTTP Web Service based on-line transmission mode for receipt and processing by the Document. This leverages the IHE ITI-41 Provide and Register Document Set-b Transaction.

2.1.4 PRE-CONDITIONS

Table 2-3 Pre-conditions

Pre-condition
It is expected that the security framework under which this Transaction operates is in accordance with the Interoperability Specification that references this construct. Therefore any applicable HITSP Security and Privacy constructs are implemented as required
The source of the information has data and documents stored in electronic format

¹ Optionality = "R" for Required, "R2" for Required if known, "O" for Optional, or "C" for Conditional



2.1.4.1 PROCESS TRIGGERS

Table 2-4 Process Triggers

Process Trigger
No applicable process triggers

2.1.5 POST-CONDITIONS

Table 2-5 Post-conditions

Post-condition
The chosen document(s) are received by the Document receiver interface using Web Services

2.1.5.1 REQUIRED OUTPUTS

Table 2-6 Required Outputs

Required Output	Format/Usage
No applicable outputs	

2.1.6 DATA FLOWS

HITSP is adhering to the IHE XDR Trial Implementation specifications without further constraint.

Technical specifications for the transmission including message header and metadata constraints may be found in the IHE XDR Trial Implementation Supplement.

2.2 LIST OF HITSP CONSTRUCTS

Table 2-7 List of HITSP Constructs

Construct Name	Interfaces	Description	Event/Action Code	Content
No applicable HITSP constructs				

2.2.1 CONSTRUCT DEPENDENCIES

Table 2-8 Construct Dependencies

Construct	Depends On (Name of Component that it depends on)	Dependency Type (Pre-condition, post-condition, general)	Purpose (Reason for this dependency)
No applicable dependencies			

2.2.2 ADDITIONAL CONSTRAINTS ON REQUIRED CONSTRUCTS

Table 2-9 Additional Constraints on Required Constructs

Data Element	Construct	Constraint	Constraint Type (Pre-condition, post-condition, general)	Purpose (Reason for this constraint)
No applicable constraints				



2.3 STANDARDS

2.3.1 REGULATORY GUIDANCE

Table 2-10 Regulatory Guidance

Standard	Description
No applicable regulatory guidance	

2.3.2 SELECTED STANDARDS

Table 2-11 Selected Standards

Standard	Description
Integrating the Healthcare Enterprise (IHE) IT Infrastructure Technical Framework (ITI-TF) 2007-2008 Trial Implementation Supplement Cross-enterprise Document Reliable Interchange (XDR) Release 3	<p>This Supplement to the IHE IT Infrastructure Technical Framework provides a generic, standards based mechanism for conveying a set of medical documents in a point-to-point networked based communication. The current version of the XDR is specified in the XDR Trial Implementation Supplement to the ITI-TF, rev. 5.0, which is consistent with IHE XDS.b Supplement in term of document entry metadata. For more information visit www.ihe.net/technical_framework</p> <p>NOTE: off-line mode transaction expected to be updated once standards are available for Web Services Off-line</p>

2.3.3 INFORMATIVE REFERENCE STANDARDS

Table 2-12 Informative Reference Standards

Standard Name	Description
Integrating the Healthcare Enterprise (IHE) IT Infrastructure Technical Framework (ITI-TF) Revision 4.0	The IHE IT Infrastructure Technical Framework defines specific implementations of established standards to achieve integration goals that promote appropriate sharing of health information to support optimal patient care. IHE Integration Profiles offer a common language that healthcare professionals and vendors may use in communicating requirements for the integration of products. The current version of the ITI-TF, rev. 4.0 for Final Text, specifies the IHE transactions defined and implemented as of August 22, 2007. For more information visit www.ihe.net
Internet Engineering Task Force (IETF), HTTP HyperText Transfer Protocol HTTP/1.1 (RFC 2616)	The Hypertext Transfer Protocol (HTTP) is an application-level protocol for distributed, collaborative, hypermedia information systems. It is a generic, stateless, protocol, which can be used for many tasks beyond its use for hypertext, such as name servers and distributed object management systems, through extension of its request methods, error codes and headers [47]. A feature of HTTP is the typing and negotiation of data representation, allowing systems to be built independently of the data being transferred. For more information visit www.ietf.org
Organization for the Advancement of Structured Information Standards (OASIS) - ebMS OASIS/ebXML Messaging Services Specifications v2.1	Defines a Message Service protocol for reliable Business-to-Business data interchange. ebMS v2.1 adds quality of service features on top of transfer protocols such as HTTP and SMTP. Key qualities of service features include guaranteed delivery and nonrepudiation of receipt. ebMS v2.1 can reliably transfer any data type including XML, X12, EDIFACT, or binary data between two parties over the Internet. For more information visit www.oasis-open.org
Organization for the Advancement of Structured Information Standards (OASIS) - ebRIM OASIS – ebXML Registry Information Model v2.1	The Registry Information Model provides a blueprint or high-level schema for the ebXML Registry. Its primary value is for implementers of ebXML Registries. It provides these implementers with information on the type of metadata that is stored in the Registry as well as the relationships among metadata Classes. The Registry information model: a) Defines what types of objects are stored in the Registry; b) Defines how stored objects are organized in the Registry. For more information visit www.oasis-open.org



Standard Name	Description
Organization for the Advancement of Structured Information Standards (OASIS) - ebRS OASIS – ebXML Registry Services Specifications v2.1	The ebXML Registry provides a set of services that enable sharing of information between interested parties for the purpose of enabling business process integration between such parties based on the ebXML specifications. The shared information is maintained as objects in a repository and managed by the ebXML Registry Services defined in this document. For more information visit www.oasis-open.org



3.0 APPENDIX

The following sections include relevant materials referenced throughout this document.

No additional information at this time.



4.0 DOCUMENT UPDATES

The following sections provide the history of changes made to this document.

4.1 DECEMBER 7, 2007

No changes. This is the first published version of the document.

4.2 MARCH 19, 2008

There were no comments against this document. Minor editorial changes were made to make this document comply with the current templates.

4.3 MARCH 27, 2008

Upon approval by the HITSP Panel on March 27, 2008, this document is now Released for Implementation.

4.4 AUGUST 20, 2008

This document has been modified to reflect the updated HITSP approach to categorizing standards as Regulatory Guidance, Selected Standards, and Informative References.

The following standards were designated as Informative References:

- Integrating the Healthcare Enterprise (IHE) IT Infrastructure Technical Framework (ITI-TF) Revision 4.0
- Internet Engineering Task Force (IETF), HTTP HyperText Transfer Protocol HTTP/1.1 (RFC 2616)
- Internet Engineering Task Force (IETF), MIME Multipurpose Internet Message Extensions (RFC 2045 to RFC 2049)
- Internet Engineering Task Force (IETF), SMTP Simple Mail Transfer Protocol (RFC 2821)
- Internet Engineering Task Force (IETF), The MIME Multipart/Related Content-type (RFC 2387)
- Organization for the Advancement of Structured Information Standards (OASIS) - ebRIM OASIS – ebXML Registry Information Model V2.1
- Organization for the Advancement of Structured Information Standards (OASIS) - ebMS OASIS/ebXML Messaging Services Specifications V2.1
- Organization for the Advancement of Structured Information Standards (OASIS) - ebRS OASIS – ebXML Registry Services Specifications V2.1

4.5 AUGUST 27, 2008

Upon approval by the HITSP Panel on August 27, 2008, this document is now Released for Implementation.

4.6 DECEMBER 10, 2008

- Updated the document to remove the mail option. This option is no longer specified by the underlying IHE XDR standard
- Updated Table 2-2 Interfaces to remove mail option, and updated Unified Modeling Language (UML) diagram to show only the ITI-41 Provide and Register Document Set-b Transaction

Minor editorial changes were made to this construct.



4.7 DECEMBER 18, 2008

Upon approval by the HITSP Panel on December 18, 2008, this document is now Released for Implementation.

4.8 JUNE 30, 2009

Minor editorial changes were made to this document. Removed boilerplate text for simplification. The term “actor” was replaced with “interface”.

4.9 JULY 8, 2009

Upon approval by the HITSP Panel on July 8, 2009, this document is now Released for Implementation.

